

# ***VERMONT2009***

## ***Lead Poisoning Prevention***

Report to the Legislature on **Title 18 §1756**

April 15, 2010



**DEPARTMENT OF HEALTH**  
**Agency of Human Services**

108 Cherry Street, PO Box 70  
Burlington, VT 05402  
1.802.863.7312  
healthvermont.gov

*Report to the Legislature*  
*April 2010****Introduction***

The Vermont Department of Health (VDH) is pleased to submit this progress report on the status of childhood lead poisoning prevention efforts pursuant to Title 18, § 1756. This annual report documents the Commissioner's efforts to prevent lead poisoning in young children. It presents the latest data on the number and percentage of children under the age of 6 who have been screened and tested for lead poisoning, and the number found to have lead poisoning at various levels. Historical data on screening are also presented. As required, the report also presents estimates of the public and private costs incurred since July 1, 1993, to prevent, correct or treat lead poisoning; an analysis of barriers to universal blood screening of children under the age of 6 years; and action steps taken by VDH to decrease lead poisoning in young children.

A 2006 statewide Lead Task Force prepared a report and recommendations for the Commissioner of Health and the Attorney General. In February 2007, the Commissioner of Health and the Attorney General held a public meeting at the State House to announce the following joint recommendations from the Task Force report, "Get The Lead Out of Vermont":

1. Lower the elevated blood lead level of concern from 10 to 5µg/dL. Vermont is the first state to do so.
2. Continue the commitment to universal screening and testing for all of Vermont's 1 and 2 year old children.
3. Enhance education and outreach and establish a state lead poisoning prevention committee with members appointed by the Commissioner and Attorney General.
4. Revamp and expand the enforcement program with the Attorney General's Office.

The Task Force report and recommendations led to revisions to the Lead Law (Title 18, § 1751-1767). First, the Commissioner of Health established 5µg/dL as the blood lead level of concern for alerting parents and guardians that their children may have been exposed to lead (§ 1757(b)). In addition, Vermont adopted an aggressive approach to achieve universal testing. The law requires that, if fewer than 85% of 1 year olds and fewer than 75% of 2 year olds have been

screened by January 1, 2011, the secretary of the Agency of Human Services shall require by rule that health care providers ensure such screening (§ 1755(b)). Finally, a new section on enforcement imposes civil penalties on owners of rental housing who fail to submit annual compliance statements. These statements document that steps have been taken to ensure that rental properties are safe from lead exposure. This report summarizes the Department's efforts to achieve these legislative objectives using federal funds.

## **Blood Lead Testing**

The Vermont Department of Health (VDH), Childhood Lead Poisoning Prevention Program (CLPPP), continues to work toward the goal of universal testing of 1 and 2 year old children in Vermont. Table I presents 2008 data on the number of young children who were tested for blood lead levels and the results of those screenings. The data indicate that in 2008, 79% of 1 year olds and 54% of 2 year olds were tested.

Table 1. Blood Lead Tests for Vermont Children ages 0 through 5\* years, 2008 \*\*

2008	Population	# Tested	% Tested	% < 5 µg/dl	% 5-9	% ≥ 10
Under 1 year	6588	422	6.4%	85.5%	12.8%	1.7%
1 yr	6723	5287	78.6%	87.6%	10.5%	1.9%
2 yrs	6191	3318	53.6%	88.2%	10.2%	1.5%
3 yrs	6466	519	8.0%	82.1%	15.0%	2.9%
4 yrs	6667	321	4.8%	85.7%	12.1%	2.2%
5 yrs	6622	150	2.3%	94.0%	4.7%	1.3%
Total, 0-5	39257	10017	25.5%	87.5%	10.7%	1.8%

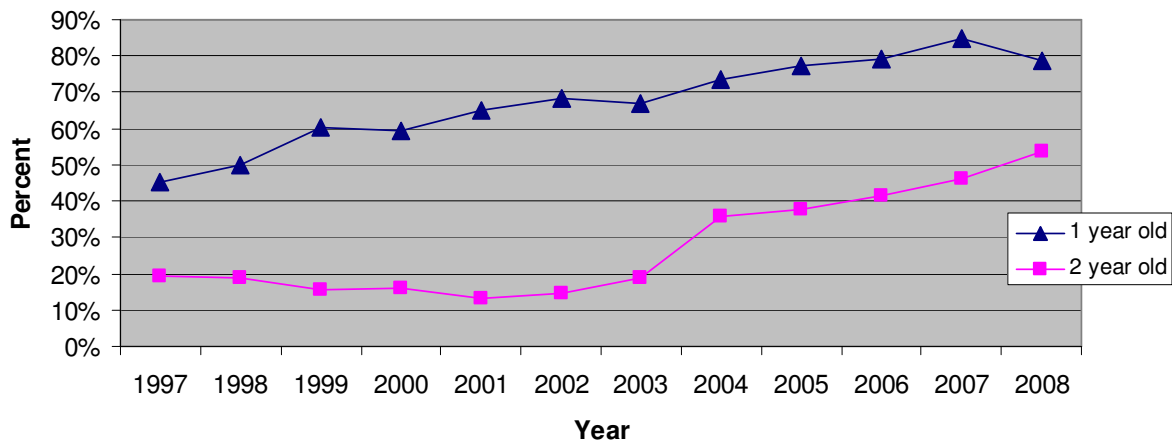
\* Ages: < 1 year : <11 months; 1 year: 11 - 22.99 months; 2 years: 23 - 34.99 months; 3 years: 35 - 46.99 months; 4 years: 47 - 58.99 months; 5 years: 59 - 70.99 months. Data include only one blood lead test per child: the highest venous test result or, if there is no venous test, then the capillary test result.

\*\* Latest available census data

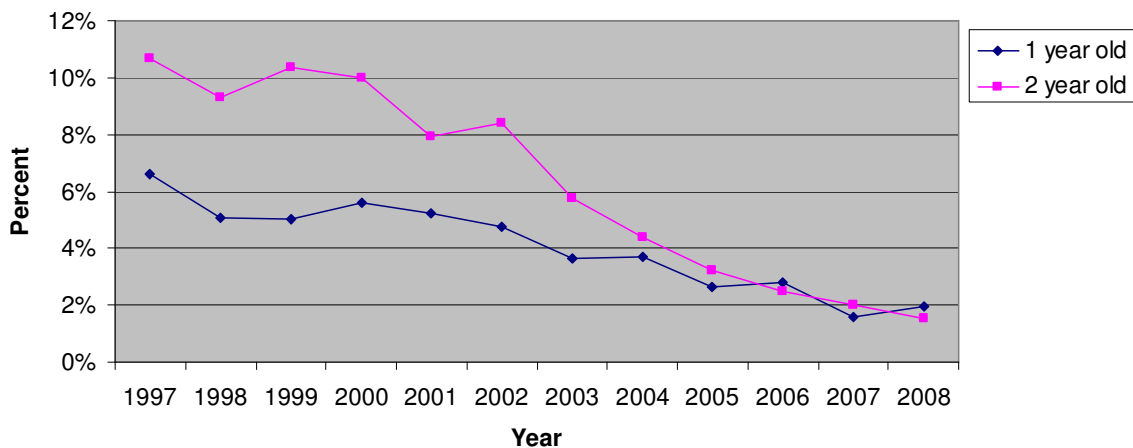
A historical illustration of the progress Vermont has made in improving screening rates appears in Figure I. Since 2003, the percentage of 2 year olds tested has more than doubled.

Figure 2 presents historical data on blood lead levels of  $\geq 10$  µg/dL for Vermont children ages 1 and 2 years old, and shows a dramatic decrease. Although this decrease is partially a reflection of more children being tested, it demonstrates progress in preventing lead poisoning among this population.

**Figure 1. Percent of 1 and 2 year old Vermont children tested for lead**



**Figure 2. Percent of 1 and 2 year old Vermont children tested with blood lead levels  $\geq 10$  micrograms per deciliter**



Although the purpose of lead testing is to identify children with elevated blood lead levels and intervene when necessary, the ultimate goal of the CLPPP is to eliminate lead poisoning among young children. Universal screening is the surveillance activity used to achieve this goal, and Vermont is improving its progress toward universal screening. For this reason, review of annual screening data is essential.

The calculation of Vermont's lead screening rate for 1 and 2 year olds has historically presented a methodological challenge. At the beginning of each year, when VDH prepares its progress report on lead screening, census estimates for the previous year are not yet available. Because it

is important to calculate screening rates by using the same year for both census and screening data, the data presented in each annual report is over a year old. For example, this report, published early in 2010, is based on the latest available census estimates, i.e. 2008. The program data for 2008 are therefore divided by the 2008 population estimate for each of the 1 year old and 2 year old cohorts to derive the percent screened as presented in Table I. This 13 month lag in performance data makes it difficult to quantify the successes of any improvement strategies implemented during the past year.

It is also apparent that year to year fluctuations in population estimates can significantly change the screening percentage. In the future, there may be a more sound method of calculating data that will smooth out annual fluctuations and provide a more accurate annual picture of screening performance. For example, the use of a 3-year average for age cohort population estimates might smooth out the statistical artifact of annual fluctuations and enable the calculation of more recent performance data. It is also possible that deriving a rate of screening, as opposed to a percentage of those screened, might be a more accurate method of measuring performance. During the upcoming year, VDH may invite stakeholders to explore revising the methodology and metrics used to analyze and present annual performance indicators.

What is clear, however, is that the number of children tested is increasing. For example, over 600 more 2 year olds were screened in 2009 than in 2008.

## ***Efforts to Improve Testing Rates***

In an effort to increase screening percentages to goal levels, VDH has provided education, outreach and prevention to families, health care providers, and organizations including:

- A letter with accompanying materials about revisions to the Lead Law was sent to all pediatricians and family physicians in Vermont and to practices in New Hampshire, Massachusetts, and New York that serve Vermont residents (more than 500 providers in total). The letter reminded providers about the importance of testing all 1 and 2 year olds and offered assistance in training their staff on capillary lead testing techniques; reviewing testing recommendations and the newest research related to blood lead exposure; and providing

educational materials and free blood lead supplies and analysis by the Department of Health Laboratory.

- Postcards were sent to all Vermont families of 10 month old children (5,693 postcards in 2008) and 22 month old children (5,679 postcards in 2008) to encourage blood lead testing.
- Newsletters are sent to Vermont families living in at-risk neighborhoods (where lead poisoning has been documented) when their children are 6 months old (2,153 newsletters in 2008), and again when they are 9 months old (2,190 newsletters in 2008) to encourage blood lead testing.
- Educational materials and testing recommendations are sent to parents whose child has a blood lead level in the range from 5 µg/dL through 9 µg/dL (859 packets in 2008).
- In 2008, the CLPPP Case Manager performed 52 home visits for children with a confirmed blood lead level of 10 µg/dL or greater, and distributed educational materials to 28 adjacent properties.
- Staff in VDH's 12 district offices contact local medical practices to encourage universal screening and offer training in taking capillary blood samples (more than 130 practices contacted in 2008, with at least 9 practices requesting training).
- Other VDH district office programs encourage parents to make sure their child is screened. The Early Periodic Screening and Diagnostic Testing (EPSDT) program added a lead screening reminder in the well child check-up postcards sent to parents. At 1 and 2 year WIC visits, WIC staff encourage parents to have their child tested at the 12-month and 24-month well child visit with their health care provider and give parents lead fact sheets. As a back-up measure, children in WIC who are not tested by their providers at 12 and 24 months may be screened by district staff at their 18 and/or 30 month WIC appointments.
- In addition to the outreach and education activities listed above, VDH has also been working toward implementing a lead screening registry module within the existing Vermont Immunization Registry. This will not only facilitate the recording of lead screening of 1 and 2 year olds, but also will enable VDH to determine lead screening rates by practice. It is hoped that this function will be available within the next year and will be another tool for improving screening rates by targeting provider practices that could benefit from technical assistance aimed at improving patient screening rates.
- VDH has undertaken a provider peer-to-peer education effort with providers of pediatric care to increase the percentage of lead screens performed. VDH has been working with the

Leadership of the Vermont Chapters of the American Academies of Pediatricians (VTAAP) and Family Physicians (VTAAFP); and the Vermont Child Health Improvement Program (VCHIP) at the University of Vermont to identify providers in need of peer-to-peer technical assistance, and the best peer-to-peer strategy for providing that assistance. In addition, VDH has contracted with a public health nurse to provide training on office-based screenings to provider office staff.

- One of the impediments to the 2 year old lead screening is the blood draw itself. For one year olds, a blood draw is a routine component of the one year exam for a hematocrit test. During that test, additional blood is drawn for the 1 year old lead screen. For the 2 year old visit, no hematocrit test is required, so a blood draw for lead screening is necessary. This can be a disincentive to perform this test. One promising approach to increasing screening of this population that has been used in a Kansas study and is being used by one provider in Vermont is the paper filter screen. To obtain this screen, the child's finger is pricked and blood is placed on a special paper. The paper is then mailed to a lab in a postage paid envelope for analysis. The Kansas study has demonstrated a 6-fold increase in the number of lead screens obtained using this technique. Because this strategy is a promising one, VDH is working with VCHIP to explore ways to implement broader use of this procedure among providers.
- In addition to the outreach efforts done by the CLPPP Program, VDH is working with VCHIP to develop two sets of outreach materials, one for parents and one for providers, to dispel misconceptions about who in Vermont is at risk for high lead levels and common sources of lead.
- VDH has also met with local community organizations to discuss lead abatement and outreach efforts. As a result, VDH sponsored a meeting in January 2010 with Burlington CEDO, Parks Place Community Resource Center in Bellows Falls, VTAAP, VTAAFP, and VCHIP to work on improved coordination, information sharing, and outreach efforts for the early intervention and prevention when a child's lead levels indicated they are high.
- With the Blueprint for Health's broader focus on children, there may be some promising strategies for increasing provider screening rates by prompting providers to screen children and intervene if indicated, and using DocSite to transmit screening data to the lead registry.

## ***Barriers to Universal Lead Testing***

In 2007, CLPPP staff engaged a group of UVM medical students to conduct a survey among pediatricians about barriers to blood lead screening. They found that the three most often reported barriers to lead screening were parental opposition, difficulty obtaining samples, and an absence of risk factors.

Barriers to screening were discussed in detail in legislative committee hearings in 2008 through testimony provided by the Department of Health, the Vermont Medical Society, private physicians, and other interested groups and individuals. Some of the barriers cited in this testimony included inadequate cost reimbursement, lack of insurance coverage and resistance among some practices.

## ***Estimates of Annual Private and Public Costs***

It is difficult to estimate the costs incurred since 1993 by the public and the private sector to prevent, correct, and treat lead poisoning. With regard to the private sector, CLPPP uses the following algorithm to estimate the costs incurred by landlords to ensure their rental properties comply with Essential Maintenance Practices (EMP). CLPPP assumes that among the 2,479 rental properties and child care centers for which EMP affidavits were filed in 2008, 25% of these properties were in good condition, 50% were in fair condition, and 25% were in poor condition. Further, CLPPP assumes that properties in good condition require \$200 in annual maintenance costs to comply with EMP requirements; properties in fair condition require \$340 in annual maintenance costs; and properties in poor condition require \$520 in annual maintenance costs. Using this formula, the amount spent for these properties in 2008 is estimated to be \$867,000.

First-time filing of a compliance statement likely incurs start-up costs to bring a property into compliance (e.g., installing window well inserts and buying a HEPA vacuum). Approximately 591 properties filed a compliance statement for the first time in 2008. This assumes an average of \$625 for each new property being brought into compliance. Additional start up costs for new properties being brought into compliance is \$369,375. Therefore, a conservative estimate for the total cost to landlords for all properties who complied with the Lead Law in 2008 is \$1,237,025.

Enforcement activities have garnered penalties from landlords who did not comply with the Lead Law; these are estimated to be \$147,000. In addition, some of those property owners have been required to spend an estimated \$193,000 on their properties to bring them into compliance. Therefore, an estimate for the total cost to landlords penalized for noncompliance is \$340,000.

In the public sector, the Childhood Lead Poisoning Prevention Program expended about \$390,000 received from the CDC in 2008, the Vermont Housing and Conservation Board expended about \$1,000,000 from the Department of Housing and Urban Development (HUD) in 2008, and the Burlington Lead Program expended about \$486,150. Therefore, about \$1,876,150 million in federal funds was spent on reducing lead poisoning in 2008.

In addition, a study completed by Dartmouth College as part of the *Get the Lead Out of Vermont* Task Force Report in 2006 estimated direct health care costs of all children with elevated blood lead levels at \$51,814 per year, and special education costs at \$219,841 a year (considered to be an underestimate because special education costs were calculated only for those children with blood lead levels 25 µg/dL or greater). The Dartmouth report also estimated more than \$79 million per year in lost future earnings of children whose blood lead levels are 5 µg/dL or greater.

Screening costs incurred by families, insurers and providers are not represented in these cost estimates.

## ***Recommendations***

In the upcoming year, the Health Department will continue to work in the following areas to prevent lead poisoning by making homes safer for children, and to increase screening for 1 and 2 year olds by educating parents and giving technical assistance to providers. Many of these activities continue the work referenced above.

- Continue the activities listed above to improve screening rates
- Offer dust wipe kits to families as a way to identify risk areas in their homes and assist families in prevention of lead exposure. Dust wipe kits are targeted at families with pregnant women and/or young children who live in a pre-1978 home.

- Help families with children who have an elevated blood lead level between 5-9 µg/dL identify lead exposure by using a dust wipe kit.
- Provide a targeted educational mailing about lead poisoning to families with children who have an elevated blood lead level between 5-9 µg/dL.
- Conduct case management and surveillance of lead poisoned children.
- Implement the lead registry module in the Vermont Immunization Registry.
- Seek additional federal funding for lead poisoning prevention programs.
- Continue to work with the Lead Poisoning Prevention Committee as an advisory body to the Health Department.
- Develop an electronic system for submitting and monitoring EMP compliance statements, and for tracking compliance statements and taking enforcement actions.
- Revise administrative rules as required by the updated Lead Law.
- Coordinate with the Attorney General's Office to increase compliance with Essential Maintenance Practices.
- Maintain a partnership with the Vermont Housing and Conservation Board Lead Hazard Reduction Program to prevent lead poisoning.
- Reach out to all 17 Vermont Career and Technical Centers to help them integrate lead education into their curricula.
- Work with Town Health Officers regarding their role in identifying lead hazards in their communities.
- Work with stakeholders to develop an annual reporting methodology that more accurately depicts annual screening performance.